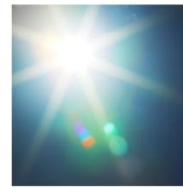


Informal Information Session for the Proposed Reissuance of VPDES Permit No. VA0004146 for Dominion – Chesterfield Power Station

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Presentation Overview

- Note: Presentation is on DEQ's site at bit.do/DEQcoalash
- Water quality concepts
- Facility background
- Permitting process
 - Current vs. proposed permit
 - Permit conditions



While this permit addresses dewatering of the ash ponds, the ultimate disposition of the ash ponds' solid contents and long-term groundwater management are the subject of DEQ solid waste program permits, and will not be addressed in this evening's information session.



DEQ Water Concepts

- Beneficial use
- Water quality criteria
- Federal Effluent Guidelines
- Water Quality-Based Effluent Limits



Beneficial Use

- Beneficial uses are defined by law
- Instream beneficial uses include:
 - Habitat protection
 - Assimilation of wastes
 - Recreation
 - Navigation
 - Cultural and aesthetic values



- Offstream beneficial uses include:
 - Domestic (including public water supply)
 - Agricultural
 - Electric power generation
 - Commercial
 - Industrial uses



Water Quality Criteria

- State regulations established to support beneficial use
 - Reviewed every three years
 - Incorporates federal regulations and state law
- Multiple criteria:
 - Aquatic life
 - Fish consumption
 - Public water supplies (where applicable)
 - Recreation
 - Shellfishing
 - Wildlife



Water Quality Monitoring/Assessment

- DEQ monitors physical, chemical and biological characteristics of VA's waters
- Assesses waters every two years, determines whether waters support designated uses
 - Waters that fail to support their designated beneficial uses are designated as "impaired" and are further evaluated

Total Maximum Daily Loads (TMDLs)

- Impaired waters are evaluated with regard to pollution sources (both man-made and naturally occurring) and a “diet” for the pollutants contributing to the impairment is developed.
- Implementation of the TMDL may include the imposition of more stringent effluent limits on dischargers within the watershed.

Water Quality Management Plans

- Before the TMDL process was established in Virginia, DEQ addressed water bodies receiving effluent from multiple dischargers by establishing Water Quality Management Plans (WQMPs) to allocate (“budget”) the wastestreams from the dischargers.
- Some of these WQMPs have been modified in response to TMDLs (e.g., Chesapeake Bay WQMP for nutrients).

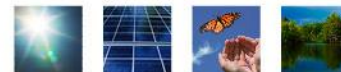
How are water quality criteria used to develop VPDES permit limits?

For a given chemical, DEQ staff evaluate:

- Flow volumes and pollutant concentrations discharged by the facility
- Water quality criteria (including TMDLs and WQMPs) and the present condition of the receiving stream.
- Limits are set to protect water quality in the stream under the worst possible combination of conditions.

What are “Federal Effluent Guidelines”?

- The Clean Water Act of 1972 and its amendments establish a minimal national standard for treatment of wastewater for a variety of industries, to ensure an even playing field; this prevents dischargers from simply finding a bigger stream to receive their wastewater.
- These guidelines NEVER account for local conditions.



- For every discharge, DEQ staff evaluate the chemicals known or reasonably believed to be discharged by the facility, that are subject to Federal Effluent Guidelines, for which water quality criteria exist, or that are listed in a TMDL or WQMP.
- If a given chemical is subject to more than one of the above requirements, the more protective of the requirements will be applied.
- The rationale for effluent limit development is extensively documented in the permit fact sheet.

How is a VPDES permit organized?

- Cover page – identifies facility and receiving streams and dictates the time during which the permit is in effect.
- Effluent limits and monitoring requirements – for each discharge point (outfall), sets limits on those pollutants that are known to be discharged and how often they are monitored.
- Schedule(s) of compliance – if a new limit is imposed on a discharge, the permittee may be given time to develop strategies to comply with the limit.
- Other operating conditions – intended to ensure compliance with the effluent limits, and establish other controls and reporting requirements to protect water quality.

How is a fact sheet organized?

- Facility information – who, what, where, why, when
- Receiving stream information – are there any relevant impairments or TMDLs?
- Wastestream characterization – how is the wastewater generated, and what does it contain?
- Legal or technical rationale for effluent limits
- Legal or technical rationale for other permit conditions
- Changes from previous permit
- Summary of comments
- Supporting documentation/calculations
- The fact sheet for the Chesterfield Power Station permit is approximately 1000 pages long.



DEQ staff will now take questions pertaining to the previous slides; please hold any questions pertaining to the Chesterfield Power Station permit until the end of the presentation.



Background

- Applicant: Virginia Electric and Power Company, dba Dominion Virginia Power
- Permit Action: Reissuance of VA0004146, Chesterfield Power Station
- Electricity first generated at facility in 1945
- Current generation units provide 1750 MW.
- Units 1-6 were coal-fired
- Units 7 & 8 replaced Units 1 and 2 and burn natural gas and distillate oil.

Coal Combustion Residuals disposal

- Historically, Coal Combustion Residuals (CCRs) were conveyed from the boilers to treatment/disposal units by wetting down the ash and sluicing the mixture to the “Lower Ash Pond” located on site.
- This pond provided settling for the ash and also provided treatment for other waste streams generated by the facility.
- Solids dredged from the Lower Ash Pond were placed in the “Upper Ash Pond” and further dewatered.

Coal Combustion Residuals disposal

- EPA's CCR rule mandates the closure of ash ponds; the closure of these ponds, and the conversion to a dry means of disposal of future CCRs, are the subjects of DEQ solid waste program permit actions and are not addressed in this permit.
- Please note that irrespective of the means of disposal of the CCRs in the ash ponds, the process of dewatering the CCRs, as regulated under this draft permit, will still be necessary.



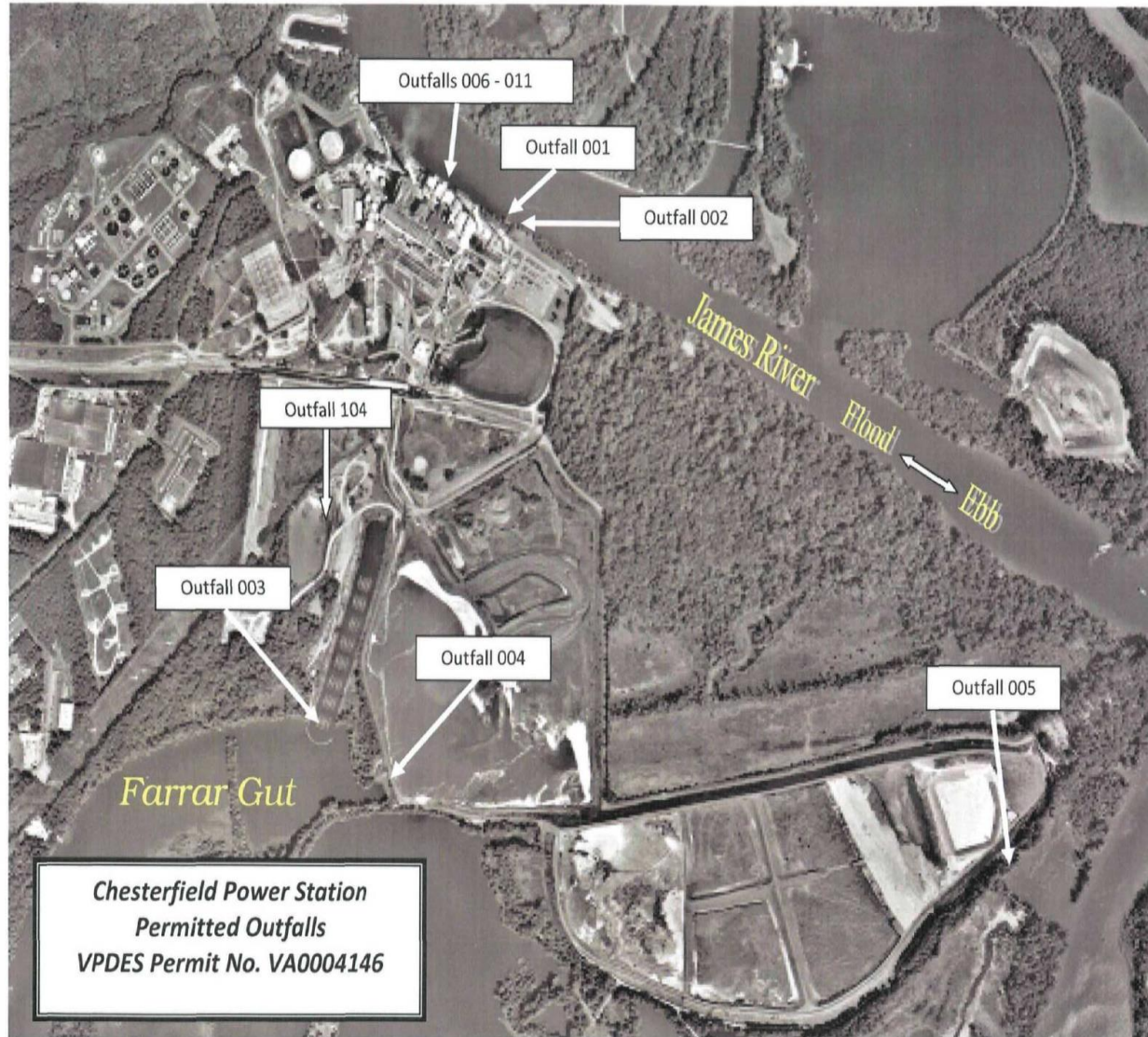
The Draft Permit Addresses:

- Effluent monitoring and limits
 - Cooling water discharges
 - Ash pond operation, decanting and dewatering
 - Other waste streams on site (low volume wastes)
- Other requirements address:
 - Cooling Water Intake Structure
 - Stormwater
 - Continuation of existing Groundwater Monitoring



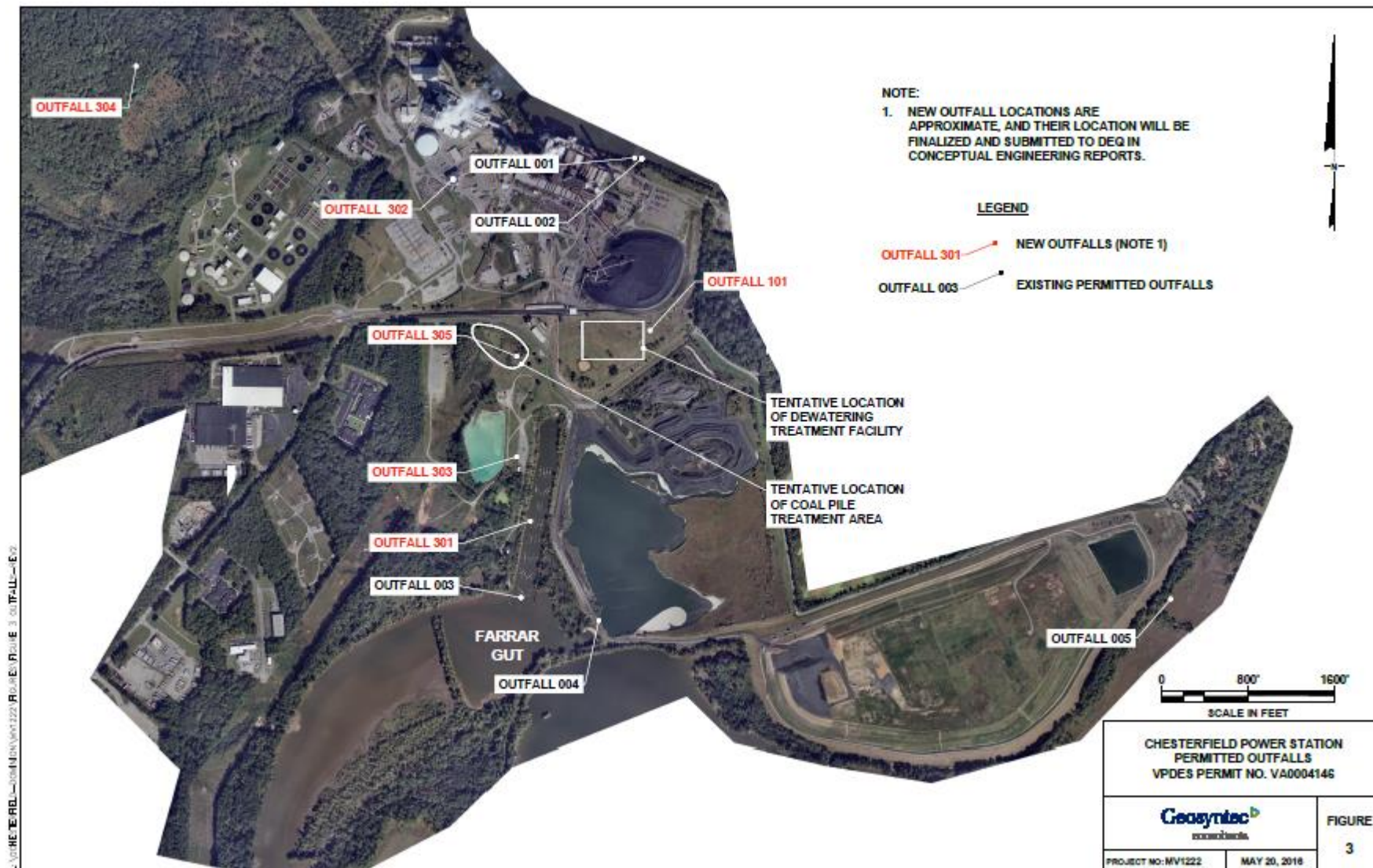
The Draft Permit Does Not Address:

- Conversion of the Coal Ash Ponds to solid waste storage facilities
- Changes to the existing groundwater monitoring, corrective action and/or risk assessment plans.



Uses of water: continuing

Source of Wastewater	Max. Flow (MGD)	Outfall Designations in VPDES permits		
		2004 reissuance	2016 reissuance (interim)	2016 reissuance (final)
Cooling water from Units 7 & 8	212	001	001	001
Cooling water from Unit 3	89	002	002	002
Cooling water from Units 4, 5 & 6	753	003	003	003



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Uses of water: discontinuing

Source of Wastewater	Max. Flow (MGD)	Outfall Designations in VPDES permits		
		2004 reissuance	2016 reissuance (interim)	2016 reissuance (final)
Stormwater landing on Lower Ash Pond	Combined discharge to not exceed 5 MGD when new treatment facility is built	004	004, then 001 or 002 via 101	N/A
Ash sluice water		004	004	N/A
Stormwater landing on Upper Ash Pond		005	004, then 001 or 002 via 101	N/A
Screen backwash from water intakes	7.235	006-011	N/A	N/A



Pond Drawdown and Dewatering

- Prior to drawdown, activities currently conducted in the Lower Ash Pond are subject to newer, more protective water quality-based limits.
- Drawdown is the treatment and discharge of standing water in the pond; dewatering is the treatment and discharge of the water trapped in the pores between the particles of the solids in the ponds.

Effluent Limit Development for Pond Closure

- During drawdown, both the Lower and Upper Ash Ponds are subject to water quality-based limits comparable to those imposed at the Bremo and Possum Point facilities;
 - Parameters known to be present in CCRs were evaluated;
 - Minimal (2:1) dilution of the effluent in the James River was assumed, and
 - Concentrations equal to the most protective water quality standard for the respective parameters were assumed present
- The permittee will be required to sample for most of these parameters three times weekly and to expedite laboratory analysis of the samples.



Special Conditions Pertaining to Drawdown/Dewatering Activities

- Ash Pond Drawdown and Dewatering Discharge: Clarifies when effluent limitations at Outfall 101 become effective during drawdown and dewatering procedures, and defines reporting requirements.
- Special Condition Establishing Treatment Requirements for Discharges Associated with Drawdown and Dewatering of the Lower and Upper Ash Ponds: This special condition also establishes monitoring and reporting requirements to ensure compliance with the condition is maintained. Additional treatment is required once certain “trigger thresholds” (below the permit limits) are reached.



Special Conditions Pertaining to Drawdown/Dewatering Activities

- Cease Discharge Requirements for Outfall 101: Any discharge from Outfall 101 during drawdown and dewatering activities that exceeds established effluent limitations is ceased as soon as possible once the exceedance(s) is discovered, and establishes conditions that must be met before the discharge resumes.
- Pond Closure Drawdown Rate: The drawdown limit of 2 feet per day was developed per the Department of Conservation and Recreation Dam Safety Division's recommendation, to minimize the risk of dam stability issues during drawdown.

Uses of water (new or changed)

Source of Wastewater	Max. Flow (MGD)	Outfall Designations in VPDES permits		
		2004 reissuance	2016 reissuance (interim)	2016 reissuance (final)
Toe drain water from Lower Ash Pond	Combined discharge to not exceed 6 MGD when new low-volume treatment facility is built	N/A	N/A	301
Low volume wastes		004	004	
Non-chemical cleaning wastes				
Station car wash		005	005	
Water Treatment Plant wastewater				
Toe drain water from Upper Ash Pond		N/A	004	
Screen backwash from Proctor’s Creek WWTP effluent				
Unit 6 Flue Gas Desulfurization (FGD) runoff	N/A	004		
FGD wastewater	0.11	N/A	402	301 via 302
Metals Cleaning wastewater	2.7	104	401	301 via 303
Leachate and stormwater from landfill	0.19	N/A	N/A	301 via 304
Coal pile runoff	2.4	004	004	301 via 305

Effluent Limit Development for New Facilities

- Low volume waste treatment currently performed by Lower Ash Pond will be performed by a new Low Volume Wastewater Treatment System(LVWWTS)
- The new system is subject to water quality-based limits developed in a manner comparable to those discussed in the Lower Ash Pond closure
 - Water quality criteria must be met at the point of discharge to Farrar Gut without instream mixing
 - Concentrations equal to the most protective water quality standard for the respective parameters were assumed present
- Several of these waste streams will receive treatment prior to being discharged to the LVWWTS and are subject to federal effluent guidelines.



Major Permit Changes (future activities)

- Notification of Commencement of Discharge from the LVWWTs: Clarifies monitoring and reporting requirements before commencement of discharge from the LVWTS. This first day of discharge will be used as the trigger date for other permit conditions.
- Water Quality Criteria Monitoring (Effluent Characterization) for Outfall 301: Worst case concentrations were developed to conduct the reasonable potential analyses for this outfall, but updated data is needed to confirm characterization of the effluent. The data will be submitted no later than 90 days following the commencement of discharge from Outfall 301.
- Process Water Conveyance Investigation: Given the size, complexity and age of the infrastructure at this permitted facility, a comprehensive investigation of the site is warranted to identify potential risks and prevent illicit and unauthorized discharges to state waters.

What happens next?

- July 6, 2016
 - Information session (6:00 PM), followed by public hearing (7:00 PM) Thomas Dale High School – West Campus, 3900 West Hundred Road, Chester VA 23831
- July 21, 2016
 - Public comment period ends
- September 22-23, 2016
 - State Water Control Board meeting (General Assembly Building)



Citizen participation

- Comments on this proposed permit action may be mailed or e-mailed to DEQ during the comment period, and comments may be provided orally, in writing, or both at the hearing.
- Comments should address the adequacy of the draft VPDES permit; if an objection to the permit is raised, please provide a technical or legal explanation for the objection.



Virginia Department of Environmental Quality

This concludes our presentation. Staff will be available to answer questions at various locations in the auditorium.

